Predicting Risk to Reoffend: Validation of the Positive Achievement Change Tool (PACT)

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Introduction

Since 2009, Tarrant County Juvenile Services has been utilizing the Positive Achievement Change Tool (PACT) to determine the risk and needs of the clients served. This study sought to determine the predictive validity of the PACT for the Tarrant County juvenile population.

Research Questions

- What is the predictive validity of the PACT?
- Does overall risk to reoffend impact time to re-offense?
- Are there gender differences in the predictive validity of the PACT?
- What, if any, individual level predictors or risk are significantly related to recidivism?

Methodology

Sample
Cohorts were formed based on calendar year (2012-2014) and included the first PACT completed in each cohort year for each youth ages 10-17.

Dependent Variable
Recidivism: The rereferral or rearrest as a juvenile or adult in the state of Texas for a Felony or Class A or B Misdemeanor offense within 12 to 36 months (depending on cohort), following the initial PACT assessment.

Time to Recidivism: The number of days from initial assessment until date of rearrest.

Independent Variables
Overall Risk to Reoffend: The juvenile's risk to reoffend as determined by the PACT (low, moderate, high).

Record of Referral Score: The juveniles record of referral score as determined by the 12 items in Domain 1. Scores range 0-31.

Social History Score: The juvenile's social history score as determined by items in Domains 2-12. Scores range from 0-18.

Individual Level Predictors of Risk
- School Issues
- Mental Health Issues
- Peers
- History of Running Away
- Family Imprisonment
- Parental Control
- Alcohol/Drug Use

Recidivism Analysis

- For each cohort, approximately 30% of the youth in the sample recidivated in the twelve months following their initial PACT.
- Females recidivated at a lower rate (less than 20% for each cohort) when compared to males (approximately 33% for each cohort).
- The proportion of youth who recidivated increased as risk level increased.
- Chi square analysis confirmed a positive relationship between risk to reoffend and recidivism, with higher risk youth more likely to recidivate.
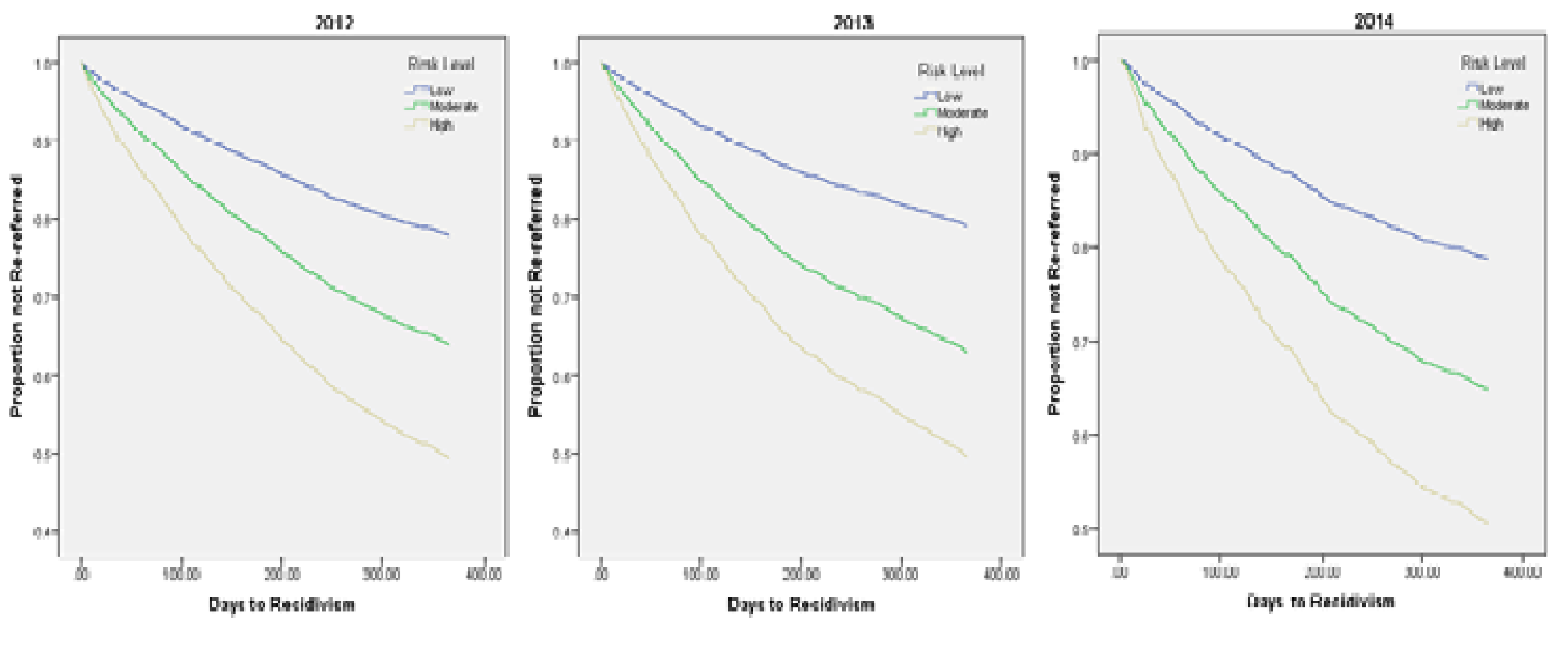

Twelve Month Recidivism by Risk Level: Total Sample

ROC Analysis

Sample	Cohort	Recidivism	AUC	S.E.	p-value	95% CI
Total Sample	2012	1 Year	.625	.011	.000	.603-.647
		2 Year	.637	.010	.000	.618-.657
		3 Year	.640	.010	.000	.621-.659
	2013	1 Year	.632	.011	.000	.610-.655
		2 Year	.649	.010	.000	.629-.669
	2014	1 Year	.624	.012	.000	.600-.647
Male-only	2012	1 Year	.620	.012	.000	.596-.644
		2 Year	.636	.011	.000	.614-.658
		3 Year	.640	.011	.000	.618-.662
	2013	1 Year	.629	.013	.000	.605-.654
		2 Year	.646	.012	.000	.623-.669
	2014	1 Year	.621	.013	.000	.595-.647
Female-only	2012	1 Year	.612	.025	.000	.562-.662
		2 Year	.616	.022	.000	.573-.658
		3 Year	.617	.020	.000	.577-.656
	2013	1 Year	.607	.028	.000	.554-.661
		2 Year	.627	.023	.000	.581-.673
	2014	1 Year	.619	.029	.000	.562-.675

- The PACT appeared to have moderate predictive validity for the total, male-only, and female-only sample.
- The predictive power of the instrument appears to increase as the recidivism follow-up period increases.
- The AUC for the male-only sample was slightly higher than the female-only sample, suggesting the PACT is slightly more predictive of male reoffending.
- A cut-point of >1 provided the greatest sensitivity, resulting in the correct classification of approximately 56% of youth who recidivated.

Survival Analysis with Overall Risk to Reoffend as Predictor

- For all three cohorts, overall risk to reoffend was a significant predictor of future recidivism.
- A pronounced difference in the survival curves for high risk and moderate risk youth and high risk and low risk youth was observed in all cohorts.
- A youth who is a low risk to reoffend was 64.6% less likely than a high risk youth to reoffend.
- Moderate risk youth were 36.6% less likely to reoffend when compared to a high risk youth.

Individual Level Predictors

- Social history score was significantly associated with recidivism across cohorts.
- Social history was a stronger predictor of recidivism, when compared with record of referral.
- Number of misdemeanor referrals and number of felony referrals were the most stable predictors of recidivism across cohorts, with misdemeanor referrals being the strongest predictor.
- For the male-only sample, current school issues, current peers, and a history of running away were significantly related to recidivism in all three cohorts.
- For the female-only sample, a history of running away or being kicked out was the most consistent significant predictor. Parental control and mental health issues were significant in some cohorts but not for all.

Implications

1. The PACT has moderate predictive validity, and as such should continue to be used by TCJS.

2. Policymakers should consider utilizing a dichotomous risk to reoffend (low and high) when determining the provision of supervision and services.

3. Timelines for engaging high risk youth in programs aimed at curtailing their criminogenic needs should be more stringent than those for lower risk youth.

4. Significant social history items should be considered in developing and determining gender-specific interventions for juvenile offenders. Programs specifically targeting these criminogenic needs should be offered by TCJS.

5. The ability of social history score to predict recidivism across gender suggests this score should be utilized in the determination of service referral and provision.